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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,980	03/22/2004	Michael Long	87180RLO	1471

7590 10/10/2006  
Pamela R. Crocker  
Patent Legal Staff  
Eastman Kodak Company  
343 State Street  
Rochester, NY 14650-2201

EXAMINER

STOUFFER, KELLY M

ART UNIT PAPER NUMBER

1762

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/805,980	LONG ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kelly Stouffer	1762	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 20-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-9,11-15 and 17-19 is/are rejected.
- 7) ☒ Claim(s) 4,10 and 16 is/are objected to.
- 8) ☒ Claim(s) 1-38 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/22/04 10/21/05</u>  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-19, drawn to a process, classified in class 427, subclass 248.1.
  - II. Claims 20-38, drawn to an apparatus, classified in class 118, subclass 715.

The inventions are distinct, each from the other because of the following reasons:

Inventions in groups I and II are related as process and apparatus for its practice.

The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus could be used with another materially different process such as one that requires inorganic, ceramic, or metal precursors.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required

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because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

During a telephone conversation with Raymond Owens on 25 September 2006 a provisional election was made with traverse to prosecute the invention of group I, claims 1-19. Affirmation of this election must be made by applicant in replying to this Office action. Claims 20-38 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1, 3, 5-9, 11-15 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent number 6291031 to Okazaki et al. in view of US Patent number 5835678 to Li et al.

Referring to claims 1, 8, and 14, Okazaki et al. includes a method for vaporizing organic materials onto a surface by providing fluidized organic powder, metering the powder, and directing the powder onto a first heated member where the powder is vaporized (column 8 lines 46-65). Okazaki et al. stresses that the goal of his invention is to minimize a phenomenon called splash by controlling particle size of the powder and to deposit a layer of controllable and uniform thickness on the substrate (column 2 lines 28-42 and column 5 lines 20-37). Okazaki et al. does not teach using a porous vaporization member with a set pore size in order to accomplish these goals. Li et al.

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teaches using a porous vaporization member with atomized solutions similar to fluidized powder that is heated and vaporizes the material passing through (column 11 lines 13-44). The vaporization plates of Li et al. additionally control the size of the particles exiting the plates (column 11 lines 44-62) and therefore create a uniform layer on a substrate with a controllable and precise quantity (abstract). Li et al. additionally uses the porous member to increase the surface area of vaporization of the particles (column 8 lines 55-65) and one of ordinary skill in the art would recognize that the belt of Li et al. forms a similar function of increasing the surface area of the member for vaporization. The atomizer of Li et al. also performs the function of creating particles of uniform size, (column 8 lines 20-28) much like the sieves and power dispersion apparatus of Okazaki et al. In addition, Li et al. includes a manifold between the heated vaporization plate 56 and reaction chamber interface 64 (the second member) as shown in Figure 2.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the procedure and apparatus of Okazaki et al. to include a liquid vaporizer system such as that taught by Li et al. in order to further control particle size, film thickness and uniformity, and increase surface area for vaporization.

With regard to claims 3, 7, 9, 13, 15 and 19, Okazaki et al. discloses equalizing the feeding and vaporization rate of the powder (column 4 lines 41-43) and Li et al. includes a temperature controlled nozzle for dispensing the material to be evaporated near the vaporization plates (column 10 lines 5-20).

With regard to claims 5, 11 and 17 Okazaki et al. shows the vapor directed towards a substrate in Figure 5, and Li et al. discloses the vapor to exit the vaporizer and travel to the substrate in column 11 lines 64-67.

With regard to claims 6, 12, and 18, Li et al. discloses the vaporization apparatus that includes the porous first member and second member to be uniformly heated with an encompassing heating jacket in column 10 lines 45-67.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okazaki et al. in view of Li et al. as applied above, and further in view of US Patent number 4734451 to Smith. Li et al. includes in the claimed invention a method for depositing powders in a solvent (column 7 lines 32-44) then atomizing the material but does not include using a supercritical solvent. Smith teaches using a supercritical solvent to molecularize the material but also to use solvents with enhanced solvation properties in order to dissolve a wider variety of powders (columns 2 and 3 lines 65-15).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Li et al. to use a supercritical solvent when dissolving powders as taught by Smith to use solvents with enhanced solvation properties in order to dissolve a wider variety of powders.

***Allowable Subject Matter***

4. Claims 4, 10 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Okazaki et al. does not include a separate deposition chamber. Li et al. includes a separate deposition chamber but does not provide for stopping vaporization of the material to prevent contamination of the chamber. Therefore, these references, alone or in combination, do not meet the requirements of claims 4, 10 and 16.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly Stouffer whose telephone number is (571) 272-2668. The examiner can normally be reached on Monday - Thursday 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

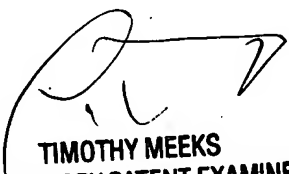


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kelly Stouffer  
Examiner  
Art Unit 1762

kms



**TIMOTHY MEEKS**  
**SUPERVISORY PATENT EXAMINER**